U.S. Department of Labor

Occupational Safety and Health Administration Washington, D.C. 20210

Reply to the Attention of:

FEB 4 1998

Mr. Frank A. White, Vice President Organization Resources Counselors, Inc. 1910 Sunderland Place, N.W. Washington, DC 20036

Dear Mr. White:

The following is a response to your letter dated December 23, 1996, related to various activities involving explosives and whether the activities are covered by OSHA's Process Safety Management of Highly Hazardous Chemicals, Explosives and Blasting Agents Standard (PSM) (29 CFR 1910,119). We apologize for the delay in responding to your request.

In your letter you ask whether OSHA intended to apply the PSM standard to certain premanufacture and postmanufacture research and testing activities involving explosives and pyrotechnics, or products containing explosives. Further, you listed and asked whether specific activities related to research and product testing of explosives were covered by the PSM standard, 1910,119.

The manufacturing of explosives and pyrotechnics is covered by the PSM standard, 29 CFR 1910.119 as set forth in OSHA standards 29 CFR 1910.1 09(k)(2) and (k)(3), respectively. OSHA considers the manufacturing of explosives to mean: mixing, blending, extruding, synthesizing, assembling, disassembling and other activities involved in the making of a chemical compound, mixture or device which is intended to explode. Unlike other highly hazardous chemicals (HHC) covered by PSM, explosive materials do not have a listed threshold quantity. If any quantity of explosives is manufactured as discussed above, then the manufacturing process is covered by the PSM standard.

Activities outside the scope of the manufacturing of explosives would not be covered by the PSM standard if those activities; occur in a separate, non-production research or test area or facility; and do not have the potential to cause or contribute to a release or interfere with mitigating the consequences of a catastrophic release from the explosive manufacturing process. OSHA does not intend that the PSM standard cover certain pre-manufacture and post-manufacture research and testing activities involving explosives, pyrotechnics or products containing explosives.

Activities OSHA considers outside the scope of the explosives manufacturing process if conducted in a separate, non-production research or test area or facility; and do not have the potential to cause or contribute to a release or interfere with mitigating the consequences of a catastrophic release from the explosive manufacturing process include:

- product testing and analysis which is not part of any in-production sampling and testing of the explosive manufacturing process;
- chemical and physical property analysis of explosives and propellants and pyrotechnics formulations;
- scale-up research chemical formulations to develop production quantity formulations;
- analysis of age tests conducted on finished products;
- failure analysis tests conducted on pre-manufactured or finished products;
- x-raying;
- quality assurance testing (not including the extraction of samples from an active explosive manufacturing [production] process);
- evaluating environmental effects, such as hot, cold, jolt, jumble, drop, vibration, high altitude, salt, and fog;
- assembly of engineering research and development models.

Although the above listed activities when conducted in their given conditions are not part of the manufacturing process of explosives and therefore are not covered by the PSM standard, each activity would be subject to the requirements of OSHA's 19 10. 109, Explosives and Blasting Agents Standard because the activities involve keeping, having or storing explosives or pyrotechnics as set forth in 1910.109(k)(1).

If you have any questions, please contact Mike Marshall of my staff at 202-219-8118 ext. 12.

Sincerely.

John B. Miles, Jr., Director Directorate of Compliance Programs

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1910 Sunderland Place, N.W. Washington, D.C. 20036 Tel: 202-293-2980 Fax: 202-293-2915



.December 23, 1996

John B. Miles, Jr.
Director
Directorate of Compliance Programs
U.S. Occupational Safety and
Health Administration
Room N-3468
200 Constitution Avenue, N.W.
Washington, D.C. 20210

Dear Mr. Miles:

This is to request your assistance in interpreting the application of the standard for process safety management of highly hazardous chemicals (PSM) (29 CFR 1910.119) to various non-manufacturing activities involving small quantities of explosives.

At a December 5, 1995, meeting between OSHA officials involved with the development and enforcement of the PSM standard and several ORC member company representatives, we discussed the history of the PSM standard, its scope and purpose, and the way processes involving explosives are handled. It was generally acknowledged that the scope of the PSM standard is limited to operations involving the processing of highly hazardous substances in quantities that present a potential to cause large scale human health, property and/or environmental damage. To address such potentially ostastrophic releases, fires and explosions, OSHA promulgated a list of toxic and reactive chemicals which would be covered by the PSM standard only when they were present, in a process, in amounts equaling or exceeding a threshold quantity. In addition, all flammable substances in a process or located in close proximity to a covered process (with the exception of certain limited storage and transportation operations) are covered when quantities meet or exceed a threshold quantity of 10,000 pounds. Process safety requirements for explosives and pyrotechnics, however, are dealt with differently, that is, by directing employers to the requirements of 29 CFR 1910.109, the standard for explosives and blasting agents. Instead of specifying a threshold quantity, employers engaged in the "manufacture of explosives" are directed by §1910.109(k)(2) to "also most the requirements contained in §1910.119." At paragraph (k)(3), a similar statement is made regarding the manufacture of pyrotechnics. Unfortunately, however, \$1910.109 does not provide a definition of the operations covered by the term "manufacture."

OSHA's addition of the manufacture of explosives and pyrotechnics to the scope of coverage of the PSM standard—without a definition of manufacture and without provision of a threshold quantity—makes the issue of defining those activities that are not "manufacturing" activities very important. In particular, the lack of a threshold quantity or a definition of manufacture has

resulted in confusion regarding whether companies performing a variety of research and development activities involving explosives must comply with PSM requirements. These activities generally involve the making or use of small quantities of explosives in laboratory environments for the purpose of performing tests and conducting research necessary to product development and quality control. It is our understanding from the December 5 meeting that OSHA did not intend for certain pre-manufacture and post-manufacture research and testing activities involving explosives and pyrotechnics, or products containing explosives, to be subject to the requirements of the PSM standard.

Although OSHA has issued several letters of interpretation regarding what is meant by an explosive and what is meant by manufacture of explosives, the letters have not addressed the needs of those involved in pre-manufacture research and development work in laboratory settings or in post-manufacture testing activities. For example, the definition of "manufacture of explosives" given in a letter to G.W. Lancour on December 30, 1993, says that it means any "mixing, blending, extruding, synthesizing, assembling, disassembling, and other activities involved in the making of a product or device which is intended to explode or contains DOT-classified explosive materials." This definition does not provide guidance in determining whether the PSM standards must be applied to research and development work involving explosives, because the activities cited are among those which are conducted during pre- and post-manufacture research and testing.

As a result, ORC requests an opinion from OSHA specifically stating that the term "manufacture of explosives" does not cover research activities involving explosives, including the formulation and development of an explosive prior to production for sale or commercial use. In order to be excluded from coverage under the PSM standard, the research activity must occur in a separate, non-production research or test area or facility, physically remote from the production area, so that any incident in the research or test area or facility would not have the potential to cause or contribute to a catastrophic release, fire or explosion in the production area. Further, we request an opinion from OSHA stating that the PSM standard does not cover product testing and analysis activity that does not involve in-production quality control sampling and that is likewise conducted in a separate research area that is not otherwise part of the production process.

Examples of activities that would not be included in the term "manufacture of explosives" when performed under the research and product testing conditions described above are:

chemical and physical property analysis of explosives, propellants, and pyrotechnics formulations;

scale-up of research chemical formulations to develop production quantity formulations;

- 3 -

analysis of aging tests conducted on finished products;

failure analysis tests conducted on pre-manufactured or finished products;

x-raying

quality assurance testing (not including the extraction of samples from an active production process);

evaluating environmental effects, such as hot, cold, jolt, jumble, drop, vibration, high altitude, salt fog and EMR; and

assembly of engineering research and development models.

We request concurrence from OSHA that such research and product testing activities should not be considered "manufacture of explosives or pyrotechnics" and that the requirements of the PSM standard are not applicable to these operations.

Please do not heritate to contact us if you need further information or assistance with regard to these requests. We look forward to your reply.

Sincerely,

Frank A. White Vice President